

## CLAIMS

1. An X-ray tube for emitting X-rays through a transmission window, comprising:

5 a closed vessel having an opening for defining said transmission window;

an electron source, arranged in said closed vessel, for emitting electrons;

an X-ray target, arranged in the closed vessel, receiving the electrons emitted from said electron source and generating the X-rays;

10 and

a silicon foil constituting said transmission window and having a thickness of 3  $\mu\text{m}$  or more but 30  $\mu\text{m}$  or less.

2. An X-ray tube according to claim 1, wherein said silicon foil is directly affixed on a part of said closed vessel defining said opening while covering said opening of said closed vessel.

3. An X-ray tube according to claim 1, wherein said closed vessel has a glass faceplate containing an alkaline ion and having an opening for defining said transmission window, and

20 wherein said silicon foil is directly affixed on said glass faceplate for defining said opening by an anodic bonding, while covering said opening of said glass faceplate.

4. An X-ray tube according to claim 3, wherein said glass faceplate has a minimum outer diameter larger than a maximum outer diameter of said silicon foil.

25 5. An X-ray tube according to claim 3, wherein said glass faceplate has a sectional shape where a thickness of a peripheral part

thereof is thinner than that of an inner side part thereof defining said transmission window.

5        6. An X-ray tube according to any one of claims 1 to 3, wherein said silicon foil has a thickness of 3  $\mu\text{m}$  or more but 10  $\mu\text{m}$  or less.

7. An X-ray tube according to any one of claims 1 to 3, wherein said X-ray target is deposited on the surface of said silicon foil of said side facing inside said closed vessel.

10       8. An X-ray tube according to any one of claims 1 to 3, wherein said opening of said closed vessel has a mesh structure so that said transmission window is divided into a plurality of sections.

9. An X-ray tube according to any one of claims 1 to 3, wherein said opening of said closed vessel is composed by a plurality of through-holes each corresponding to said transmission window.